California Department of Fish & Wildlife
575 Market Street, Suite 3700
San Francisco, CA 94105
BWERcomments@wildlife.ca.gov

REIR Scoping Comments
Sea Level Rise and
68,000 cfs Project Q
Tom McMahon
November 25, 2023

Attn: Ballona Wetlands Restoration Project –

Scoping comment in the form of a question.

Ballona FEIR 2020 uses a sea level rise (SLR) projection of 59" [1.5 meters, "high" scenario, Modified NRC-III curve] for year 2100 cited from:

> *USACE ("Corps") "Sea-Level Change Considerations for Civil Works Programs, EC 1165-2-212"* ***October 1, 2011***

That 59" [1.5 meters] figure is used throughout the EIR, but especially in hydrology and levee design appendices:

> "*Ballona_Appendix F.pdf*", "*Ballona_Appendix B_pt2*", and "*Ballona_Appendix B_pt4*".

Ben Hamlington of NASA/JPL recently provided us with their Sept 26, 2023 SLR data for NOAA Santa Monica, CA - Station ID: 9410840, federal Interagency Technical Report, which is based on the IPCC AR6.

The EIR's 59" figure from *EC 1165-2-212* Oct 2011 and the appendices mentioned above are clearly obsoleted by the new NASA/JPL Interagency Report. Hamlington et. al. Sept 2023 projections would indicate new levee design criteria of *68-, 77- and 83-inches* SLR by the year 2100. ("High" scenario quartile distributions, attached.)

Rerunning the USACE ("Corps") SLAT tool with these same initial assumptions "Santa Monica, CA - Station ID: 9410840, NVAD 88, 50%, *Project Source: NOAA et al. (2022)"* produces nominally the same results as the new NASA/JPL numbers with the same parameter setups. (i.e. *~ 68 … 83 inches*)

The issue at hand for the new CDFW REIR levee analysis will not just be the new 68,000 cfs Project Design Q (May 17, 2023 Court decision, specific issue #1.) The new accelerated sea level data must be factored in as well. (Plus, requisite USACE, LACFCD and FEMA/NFIP stipulations.)

Question – Will USACE, LACFCD, and/or FEMA/NFIP use these new NASA/JPL Interagency Task Force SLR projections (specifically "*NOAA et al. (2022)")* for review/analysis of the REIR's levee design going forward?

Sincerely,

Tom McMahon, Engineer
8207 Delgany Avenue
Playa del Rey, CA 90293
Hyperion@PN-Junction.Net
+1-310-717-7208

CC:

Wildlife Conservation Board
Jennifer Norris, Executive Director
P.O. Box 944209575
Sacramento, CA 94244-2090
+1-(916) 445-8448
Jennifer.Norris@wildlife.ca.gov
WCBCorridors@wildlife.ca.gov

CDFW Headquarters
Chuck Bonham
715 P Street, Sacramento, CA 95814
P.O. Box 944209
Sacramento, CA 94244-2090
+1-(916) 445-0411
https://wildlife.ca.gov/Contact

References:

"**NASA Interagency SLR Task Force, National Tech Report**, Santa Monica 2023-09-26.xlsx" [attached] based on the IPCC AR6 (below).
NASA/JPL Contact:

Benjamin Hamlington
Research Scientist, NASA Jet Propulsion Laboratory
4800 Oak Grove Drive, Pasadena, CA 91109
+1-818-354-6202
benjamin.d.hamlington@jpl.nasa.gov

USACE Sea Level Analysis Tool **(SLAT)** Ref: Santa Monica, CA - Station ID: 9410840, NVAD 88, 50%, ***Project Source: NOAA et al. (2022)***

https://climate.sec.usace.army.mil/slat/

NASA/JPL Sea Level Change Interagency Task Force 2022 FAQs:

https://sealevel.nasa.gov/faq/16/what-are-the-scenarios-from-the-sea-level-rise-interagency-task-force-and-how-do-they-compare-to-the/

National Ocean Service, Sea Level Rise Tech 2022 Report:

https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-tech-report-sections.html

IPCC AR6 Synthesis ReportClimate Change 2023

https://www.ipcc.ch/report/ar6/syr/

IPCC Sixth Assessment

https://www.ipcc.ch/assessment-report/ar6/

Misc.: HEC-RAS 6.5, Project Design Q, FEMA/NFIP, CLOMR, LOMR, O&M Plan, Base Flood Elevation

Ballona_Appendix F: "the design flood flow rate used in this analysis is 46,000 cfs" (Page 319/566)

Ballona_Appendix B_pt2: "the hydraulic modeling assumes 59 inches of sea level rise by 2100"

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

(Page 293/474)

Ballona Wetlands. D120367.00

~~Figure 13~~
Q100 Shear Stress and Velocity Map

F10-33

NASA/JPL Interagency SLR Task Force, National Tech Report, Santa Monica 2023-09-26

NASA/JPL Interagency SLR Task Force, National Tech Report, Santa Monica 2023-09-26

Units	scenario	quantile	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150
mm	Low	17	33.89199	57.89199	80.89199	100.892	118.892	133.892	149.892	165.892	178.892	186.892	195.892	204.892	212.892	220.892
mm	Low	50	48.89199	76.89199	104.892	126.892	150.892	174.892	194.892	213.892	235.892	252.892	269.892	287.892	304.892	321.892
mm	Low	83	66.89199	100.892	134.892	160.892	190.892	223.892	250.892	276.892	310.892	339.892	369.892	403.892	432.892	465.892
mm	IntLow	17	39.89199	71.89199	103.892	138.892	176.892	218.892	265.892	312.892	351.892	395.892	436.892	477.892	517.892	556.892
mm	IntLow	50	59.89199	95.89199	133.892	174.892	217.892	263.892	314.892	371.892	425.892	479.892	534.892	590.892	646.892	703.892
mm	IntLow	83	83.89199	123.892	168.892	217.892	266.892	317.892	374.892	435.892	505.892	576.892	652.892	732.892	818.892	917.892
mm	Int	17	46.89199	81.89199	121.892	170.892	229.892	307.892	418.892	568.892	695.892	816.892	933.892	1040.892	1142.892	1231.892
mm	Int	50	66.89199	105.892	155.892	218.892	294.892	387.892	515.892	694.892	897.892	1099.892	1269.892	1424.892	1578.892	1737.892
mm	Int	83	86.89199	134.892	202.892	287.892	391.892	511.892	651.892	806.892	1008.892	1299.892	1694.892	2214.892	2847.892	3611.892
mm	IntHigh	17	45.89199	81.89199	131.892	208.892	310.892	437.892	611.892	856.892	1074.892	1249.892	1385.892	1531.892	1659.892	1726.892
mm	IntHigh	50	68.89199	117.892	184.892	287.892	442.892	652.892	881.892	1127.892	1411.892	1665.892	1877.892	2076.892	2231.892	2408.892
mm	IntHigh	83	92.89199	161.892	276.892	427.892	604.892	807.892	1057.892	1309.892	1563.892	1899.892	2261.892	2626.892	3049.892	3473.892
mm	High	17	47.89199	82.89199	143.892	244.892	408.892	629.892	954.892	1356.892	1743.892	2027.892	2228.892	2435.892	2563.892	2647.892
mm	High	50	69.89199	125.892	212.892	357.892	575.892	862.892	1202.892	1570.892	1955.892	2341.892	2672.892	2947.892	3230.892	3509.892
mm	High	83	90.89199	176.892	324.892	509.892	746.892	1022.892	1362.892	1724.892	2115.892	2562.892	3170.892	3813.892	4498.892	5208.892

NASA/JPL

U.S. Army Corps of Engineers, 2011. "Sea-Level Change Considerations for Civil Works Programs." EC 1165-2-212. October 1, 2011	USACE Quantile	USACE "HIGH" mm	USACE "HIGH" inches	NASA/JPL Quantile	NASA/JPL HIGHs mm	NASA/JPL HIGHs inches	YEAR 2100	2110	2120	2130	2140	2150
							NASA/JPL 2023 versus FEIR 2019 (USACE 2011)					
	N/A	1498.6	59	17	1743.892	68.65717	116.37%	135.32%	148.73%	162.54%	171.09%	176.69%
	N/A	1498.6	59	50	1955.892	77.00362	130.51%	156.27%	178.36%	196.71%	215.59%	234.21%
	N/A	1498.6	59	83	2115.892	83.30283	141.19%	171.02%	211.59%	254.50%	300.21%	347.58%

In 2022, the Sea Level Rise and Coastal Flood Hazard Scenarios and Tools Interagency Task Force produced a Technical Report titled "Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines". This report provides the most up-to-date sea level rise scenarios, available for all U.S. states and territories, out to the year 2150. It is the latest product from the Task Force, which includes the National Aeronautics and Space Administration, the National Oceanic Atmospheric Administration, Environmental Protection Agency, U.S. Geological Survey, and U.S. Army Corps of Engineer, along with partners in academia. The information in the report is intended to inform coastal communities and others about current and future sea level rise to help contextualize its effects for decision making purposes. This is the Sep 26, 2023 Update.